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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,435	01/14/2004	Tiberiu Jamneala	10030714-1	5635

7590 06/22/2005  
AGILENT TECHNOLOGIES, INC.  
Legal Department, DL 429  
Intellectual Property Administration  
P.O. Box 7599  
Loveland, CO 80537-0599

EXAMINER

DESTA, ELIAS

ART UNIT PAPER NUMBER

2857

DATE MAILED: 06/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/758,435

Applicant(s)

JAMNEALA ET AL.

Examiner

Elias Desta

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☒ Claim(s) 35 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/14/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## Detailed Action

### Claim rejection – 35 U.S.C. § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1, 3-7, 10, 12-18, 20-24, 27 and 32-34 provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-13, 15-20, 24 and 28-30 of copending Application No. 10/368,179. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

### Obvious Type Double-Patenting

3. Claims 2 and 11 provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/368,179 in view of Ferrero et al. (IEEE Article, 'Comparison Between a Vector Multi-port Network Analyzer and the National S-Parameter Measurement'). Claim 1 of Application No. 10/368,179 includes a method for determining a parameter value for a set of calibration standard used to calibrate a vector network analyzer which employs measurements of an asymmetric reciprocal device, but does not provide that the asymmetric reciprocal device has a number of ports greater than or equal to a number of test ports of the multi-port vector network analyzer (VNA). Ferrero et al. discloses an equal number of device ports

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are equal to the number of multi-port network analyzer (VNA or NWA). Therefore, it would have been obvious to the person having ordinary skill in the art at the time the invention was made to modify the asymmetric reciprocal device in Application No. 10/368,179 and incorporate an equal number of ports with the VNA in order to establish all the required standard values because the measurement or the calibration provides a logical test where its capability is adopted as a standard measurement system (see Ferrero et al., page 143, last paragraph).

With regard to claims 8, 9, 19 and 25 claims are rejected over claims 1, 15 and 20 of copending Application No. 10/368,179 in view of Ferrero et al. Claim 1 of Application No. 10/368,179 includes a method for determining a parameter value for a set of calibration standard used to calibrate a vector network analyzer which employs measurements of an asymmetric reciprocal device, but does not provide a known defining parameters and single thru standard of the set of calibration.

Ferrero et al. teaches a 3-port test set calibration method than includes three single thru connections and one sliding load at port 1 (a known defining parameter) (see Ferrero et al., page 143, paragraph 5).

Therefore, it would have been obvious to the person having an ordinary skill in the art at the time the invention was made to modify the calibration standard used to calibrate a vector network analyzer which employs measurement of an asymmetric reciprocal device as noted in Application No. 10/368,179 with a known 3-port test set calibration method that includes three single thru connections at

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ports 1-3 and one sliding load at port 1 (a known defining parameter) because the test arrangement would provide the user to reduce the random noise and minimize the frequency error (see *Ferrero et al.*, page 143, 2<sup>nd</sup> column, 2<sup>nd</sup> paragraph).

With regard to claim 19 the claim is rejected over claim 15 of copending Application No. 10/368,179 in view of *Ferrero et al.* Claim 15 of Application No. 10/368,179 includes optimization error coefficients of an error model of the vector network analyzer using measurements of an asymmetric reciprocal devices. As noted above, the claimed method does not include a set of precision thru calibration standard. However, as noted above claims 8 and 9 of Application No. 10/368,179 in combination with *Ferrero et al.* includes a three single thru connections at ports 1-3 and one sliding load at port 1 (a known defining parameter), further in *Ferrero et al.*, the sliding load at port 1 has 30 dB precision attenuator S21 (see *Ferrero et al.*, Fig. 3).

With regard to claim 26 the claim is rejected over claims 21-23 of copending Application No. 10/368,179. The method of steps noted in claims 21-23 of Application No. 10/368,179 depends on claim 20. As noted above, claim 20 of Application No. 10/368,179 is the same as claim 24 of the instant application. Further, the method of steps noted in the instant claim 26 would have been obvious to the person having an ordinary skill in the art that claims 21-23 of Application No. 10/368,179 would represent equivalent method of steps as claim 26 of the instant application.

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4. Claims 28-31 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 25-27 of copending Application No. 10/368,179 in view of Ferrero et al. (IEEE Article, 'Comparison Between a Vector Multi-port Network Analyzer and the National S-Parameter Measurement').

Independent claims 25-27 of Application No. 10/368,179 all include a vector network analyzer with a test set or with a set of calibration standard where the calibration compensator comprising a measurement of an asymmetric reciprocal device, but does not characterize or standardize the test procedure based on a multi-port vector network analyzer with a multi-port asymmetric reciprocal device.

Ferrero et al. teaches a multi-port vector network analyzer based on a comparison with a two port S-parameter (scatter) (see Ferrero et al., page 143 abstract and summary).

Therefore, it would have been obvious to one having an ordinary skill in the art at the time the invention was made to modify the network analyzer as stated in claims 25, 26 and 27 and incorporate a multi-port network vector analyzer in order to carry out calibration based on two or more ports or multi-port devices because these calibration results "open the possibility to use the new multi-port network analyzer for certification measurements of multi-port devices" (see Ferrero et al., page 143, Abstract, the last three lines).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### Claim Objection

5. Claim 35 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### Conclusion

6. Other prior art made of record:

- Clark et al. (U.S. Patent 6,041,077) teaches a three-pair measurement method that determines the amplitude and phase transmission response of frequency translating devices.
- Conte (U. S. Patent No. 6, 647, 357) teaches a method of finding noise resulting in asymmetrical data in a two port reciprocal network, the reciprocity error is corrected, in which an algorithm is used to obtain an optimal symmetric matrix approximation to a measured reciprocal network.
- Grace (U. S. Patent No. 4, 808,131) teaches an asymmetrical coupling circuit for use in a network analyzer, for improving the dynamic range of forward and reverse transmission measurements.

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- Bockelman et al. (IEEE Article, 'Calibration and Verification of the Pure-Mode Vector Network Analyzer') teaches a method of measurement of mixed-mode scattering parameters (s-parameters) of differential circuits.
- Wiatr et al. (Warsaw University, 'Simultaneous Noise and Vector Network Analysis Using Radiometer Systems') teaches noise measurement system with simultaneous noise and small-signal characterization of networks.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elias Desta whose telephone number is (571)-272-2214. The examiner can normally be reached on M-Thu (8:30-7:00).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (571)-272-2216. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-872-9306 for regular communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)-272-1750.

Elias Desta  
Examiner  
Art Unit 2857

-ed

June 8, 2005

  
**HAL WACHSMAN**  
PRIMARY EXAMINER  
*Av 205*



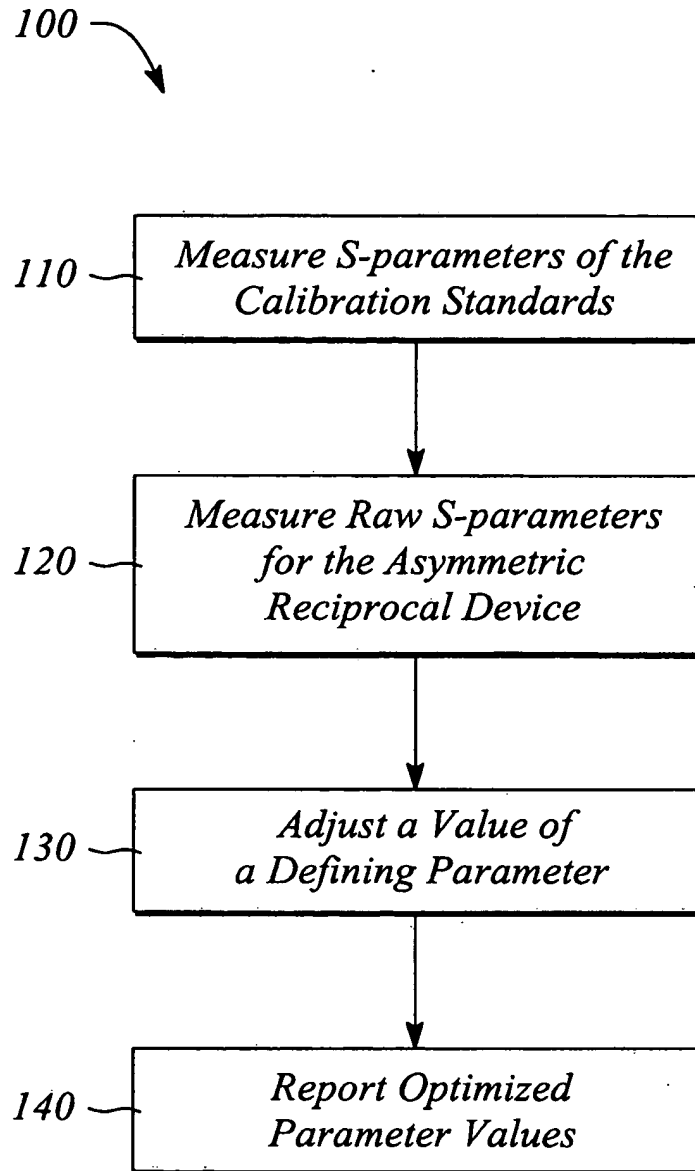
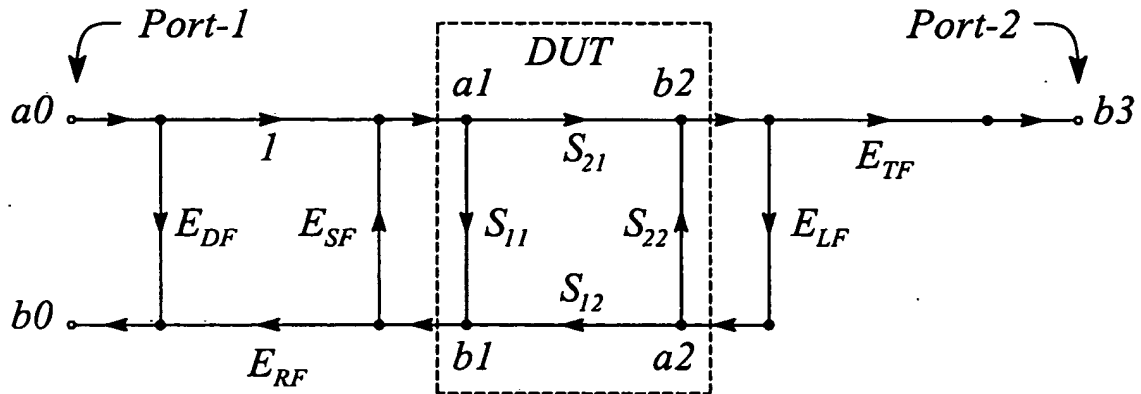
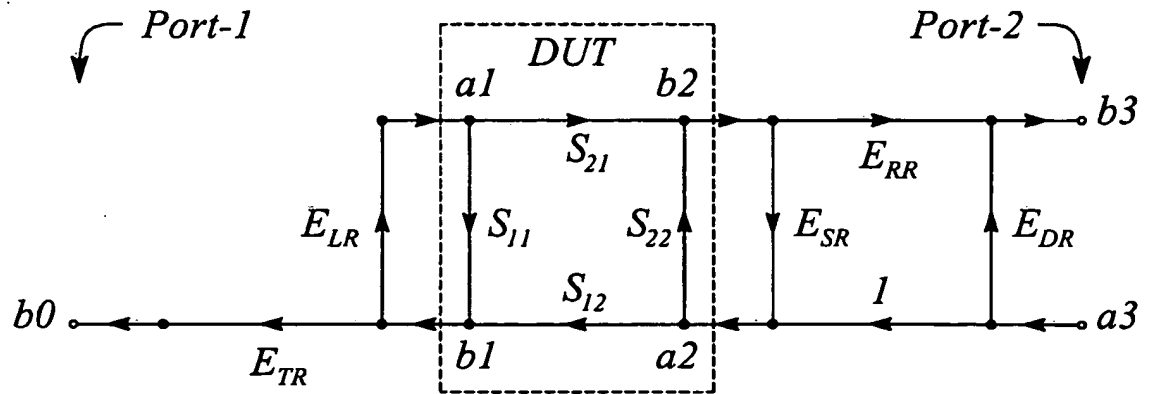


FIG. 1



Prior Art

FIG. 2A



Prior Art

FIG. 2B

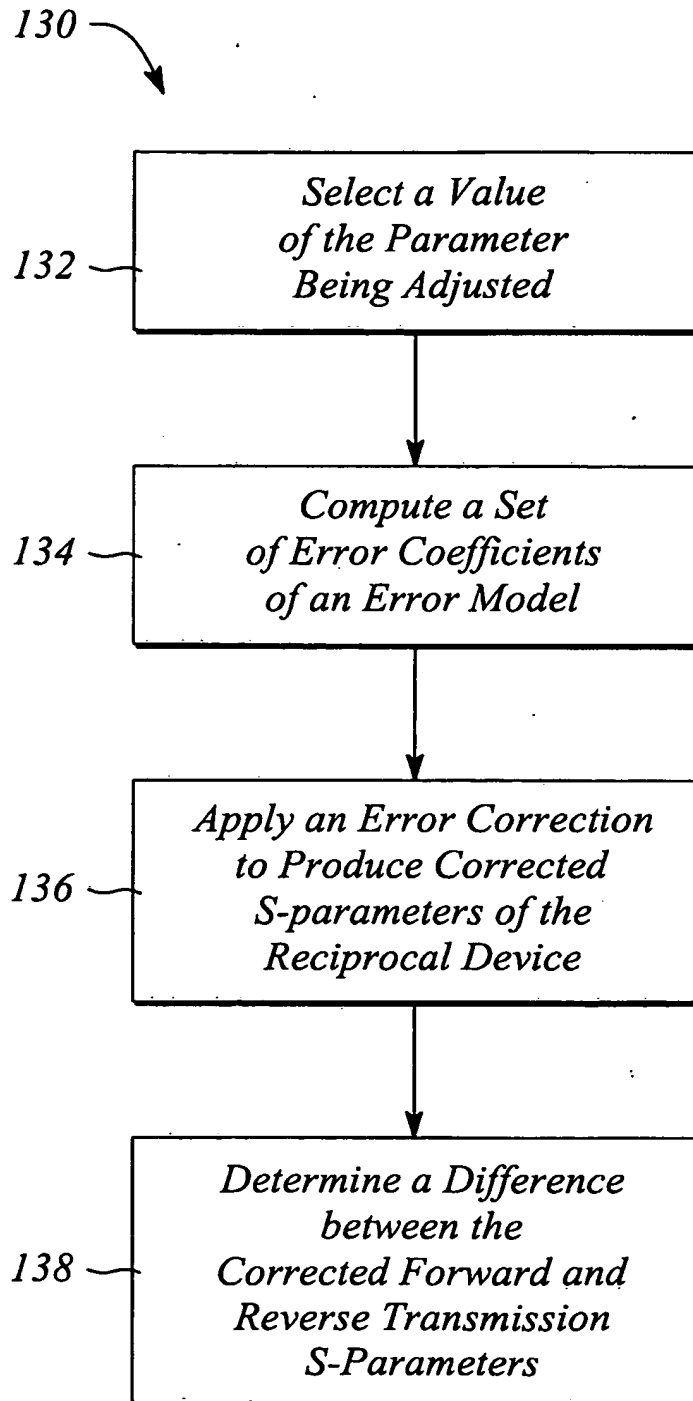


FIG. 3

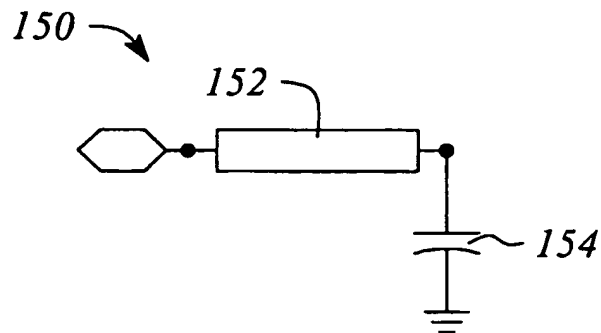


FIG. 4A

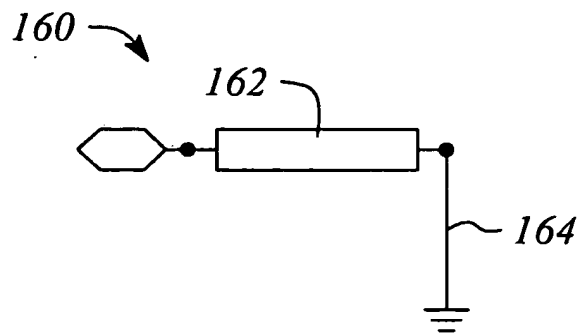


FIG. 4B

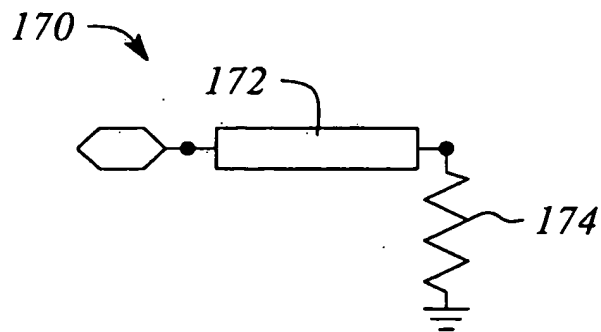


FIG. 4C

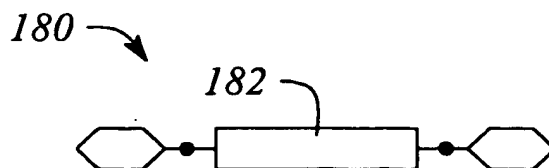


FIG. 4D

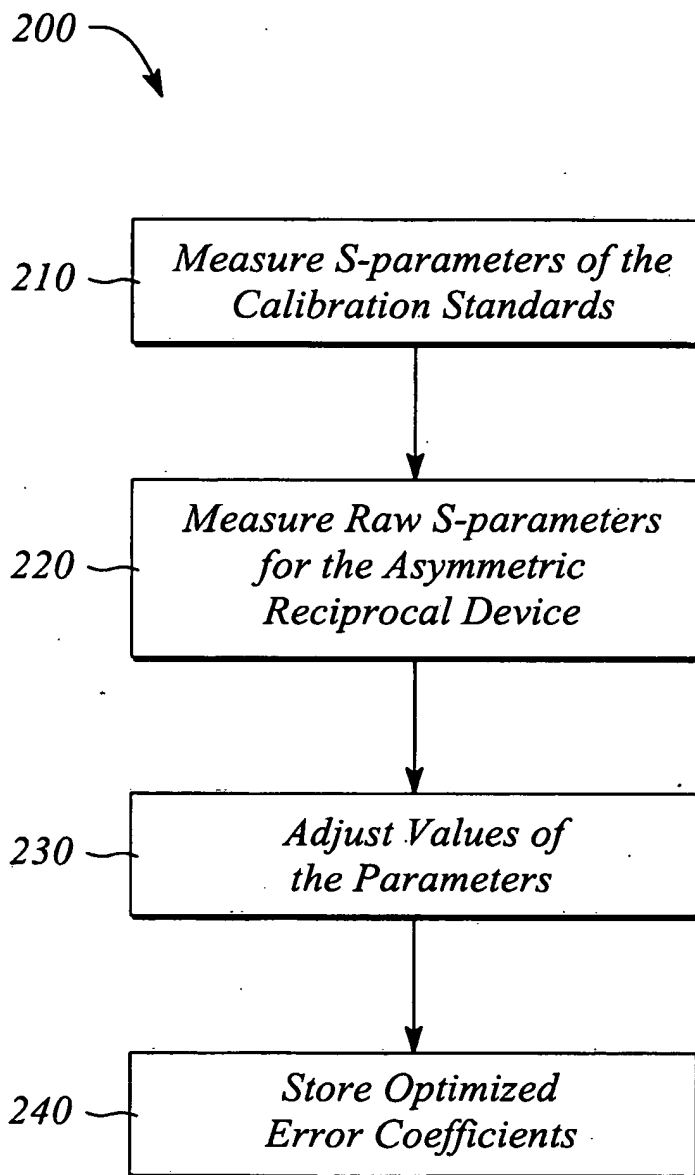


FIG. 5

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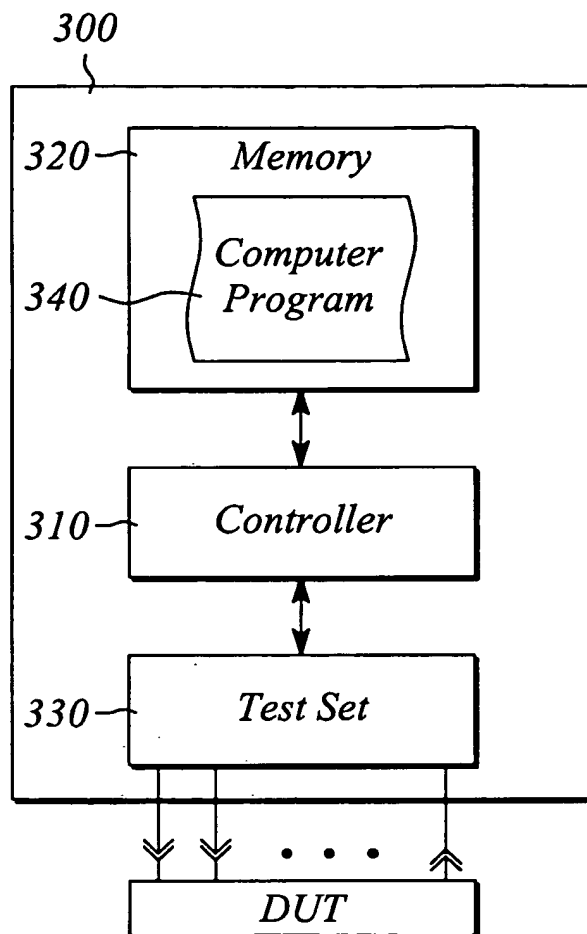


FIG. 6

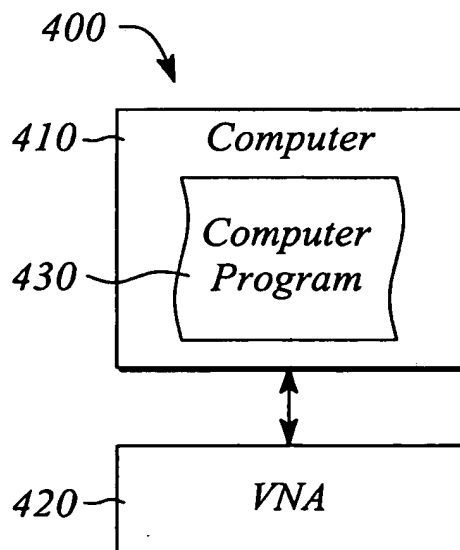


FIG. 7